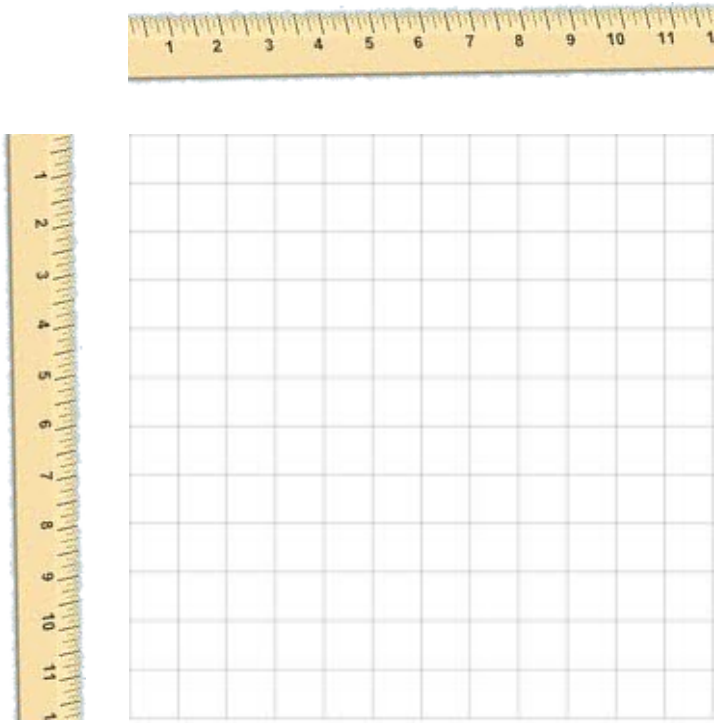
when converting from inches to feet, you simply divide by 12 . . .
. . . but this is not true of square inches or cube inches



Let's say that you had a 12 inch x 12 inch squared area.

To find the square feet, you would <u>not</u> just divide by 12. That would be (12 x 12 = 144) inches divided by 12, which would be 12.

Instead, convert the dimensions BEFORE calculating the area.
12 inches divided by 12 = 1 foot
1 foot times 1 foot is 1 squared foot

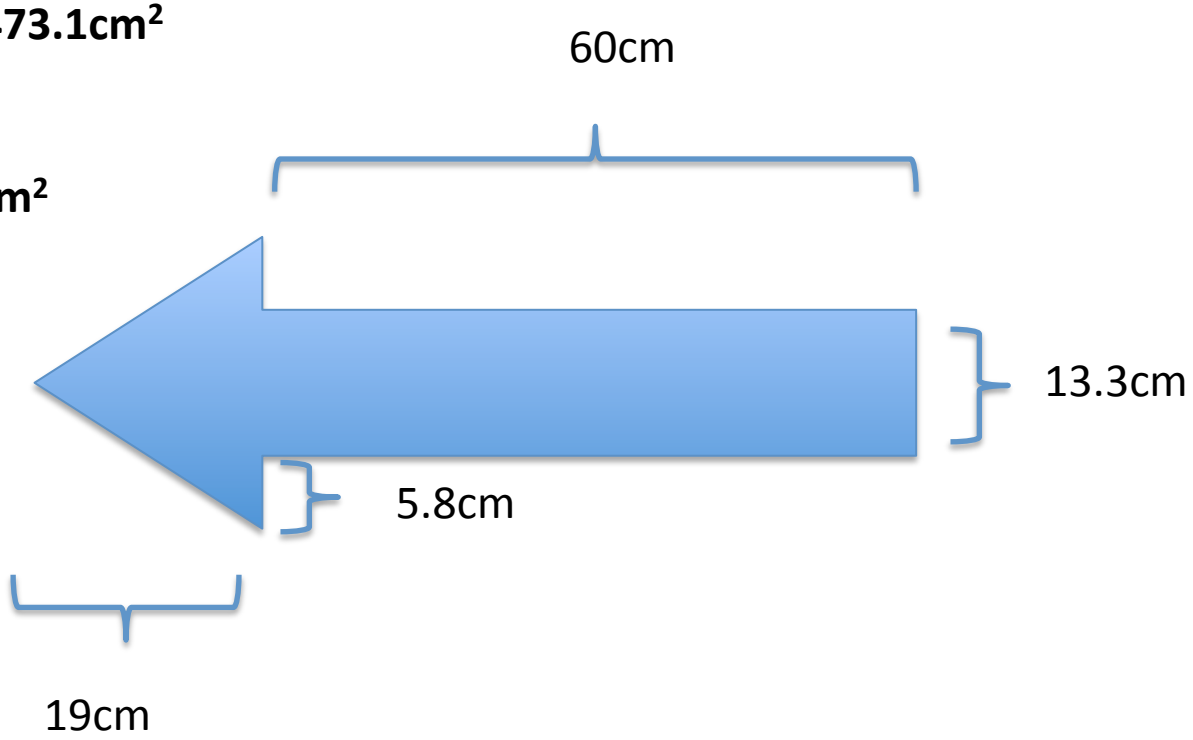
Example: What is the square footage of a 36 inch x 36 inch shape?
WRONG: 36 x 36 = 1296 sq inches divided by 12 = 108 sq feet
RIGHT: 36 x 36 = (36/12) x (36/12) = 3 x 3 = 9 sq feet

whole sign = 89cm x 29 cm
= 89mm x 29mm = 2581cm^2

triangle:
base = 24.9 mm (5.8cm + 5.8cm + 13.3 cm)
height = 19 cm
area = 1/2 (24.9cm)(19cm) = **473.1cm^2**

rectangle:
area = (60cm)(13.3cm) = **798cm^2**
total arrow = 1271.1 cm^2

total - arrow = black portion
= 2581cm^2 – 1271.1cm^2
= 1309.9cm^2



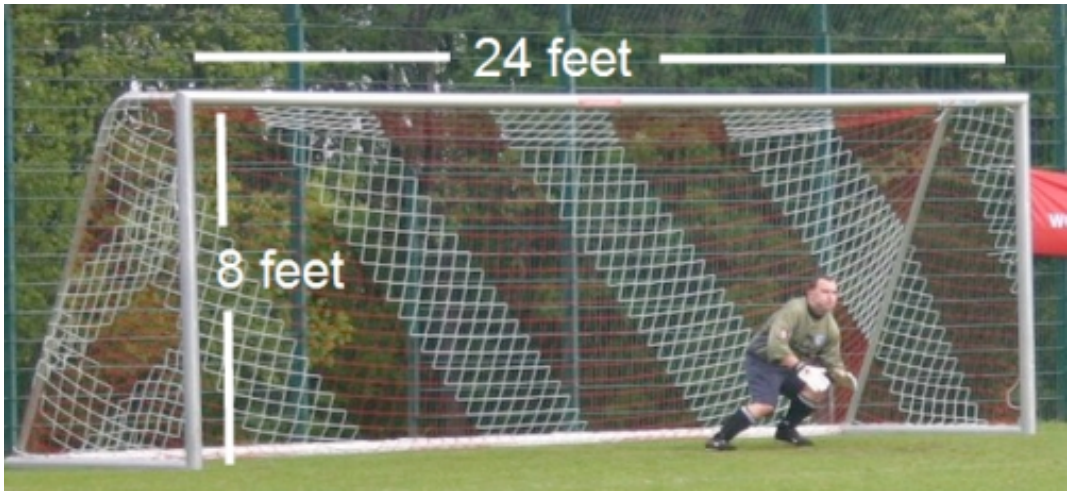
diameter=24.9inches

source:
http://www.michelinman.com/tire-selector/category/luxury-performance-touring/energy-mxv4-s8/tire-details

cicumference = pi x diameter
= (3.14)(24.9inches)
= 78.186 inches

general formula:

$$\frac{\text{(distance in miles) (5280 feet in a mile) (12 inches per feet)}}{\text{78.186 inches}}$$



source:
http://www.youthsoccerbootcamp.com/2012/01/soccer-goal-dimensions.html

soccer goal area = (8 feet)(24 feet)
= (8 * 12 inches)(24 * 12 inches)
= (96 sq in)(288 sq in)
= 27648 square inches

diameter of soccer ball = 24.6cm = 9.68 inches
area of soccer ball = (pi) (radius)(radius)
= 3.14(4.84in)(4.84in)
= 73.56 square inches

73.56

27648

56.5 inches

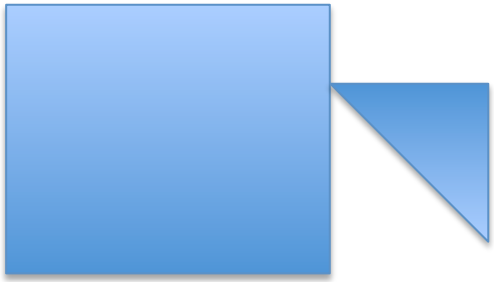
9 sticks

12 sticks

19 sticks

10 sticks

18 sticks



= 56.5 inches

9 units
9 x 5.65 inches
= 50.58 in

9 units
9 x 5.65 inches
= 50.58 in

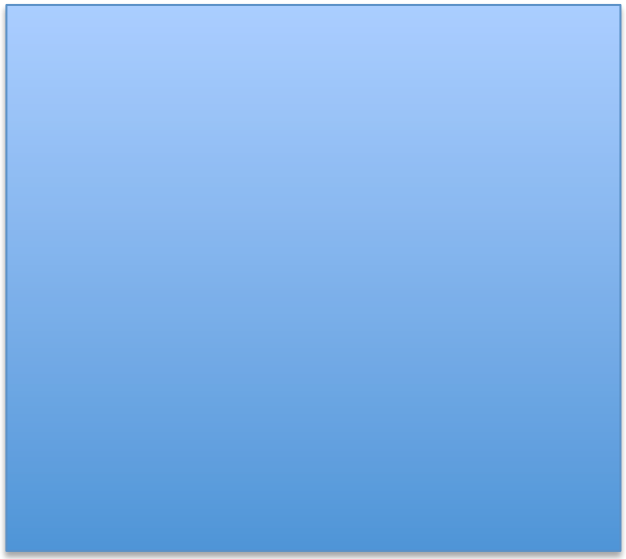
I9 units
19 x 5.65 inches
= 107.35 in

I0 units
10 x 5.65 inches
= 56.5 in

I8 units
18 x 5.65 inches
= 101.7 in

= 56.5 inches

I unit = 5.65 inches



I9 units
19 x 5.65 inches
= 107.35 in

9 units
9 x 5.65 inches
= 50.58 in

9 units
9 x 5.65 inches
= 50.58 in

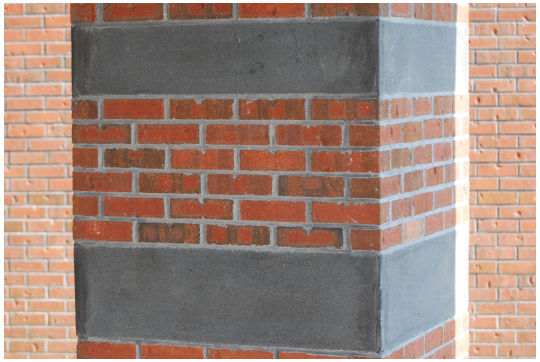
I8 units
18 x 5.65 inches
= 101.7 in

whole area = 107.35 in x 101.7 = 10918 sq in

triangle area = 1/2 (50.58 * 50.58)= 1279 sq in

10918 sq in – 1279 sq in = 9639 sq in

Slope $\overline{AC}$ = –0.38

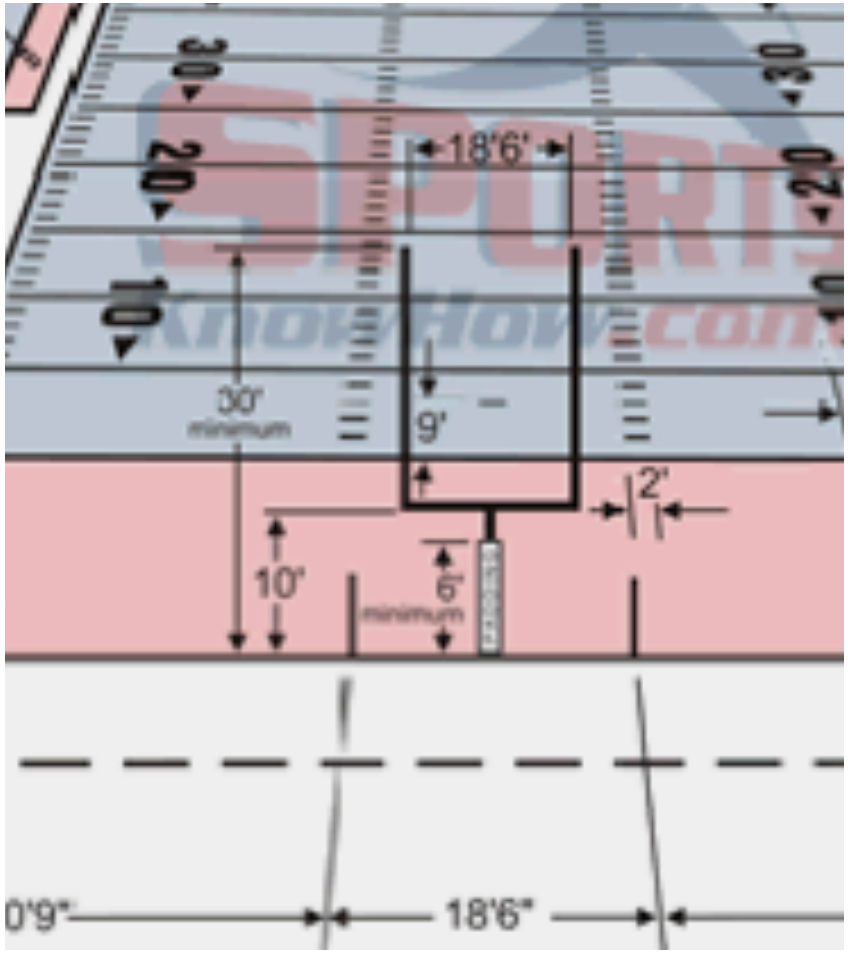


42cm

91cm

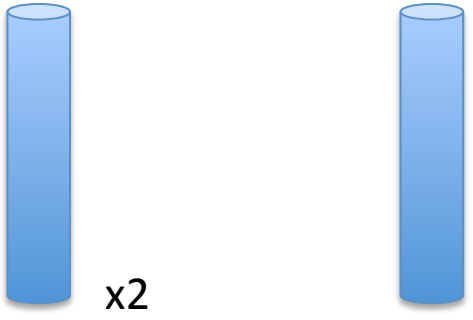
each side = 42 cm x 91 cm =
= 3822 square cm
3822 x 4 sides = 15288 sq cm

15288 sq cm = 2730 sq in = 16.5 sq ft



circumference = 50.5cm
= pi * diameters

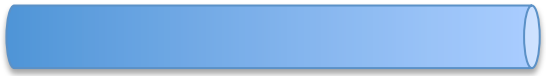
so, diameter = circum / pi
= 16.07 cm = 6.33 in



x2

9ft = 108 in

10ft=120 in



18ft 6 I = 222 inn

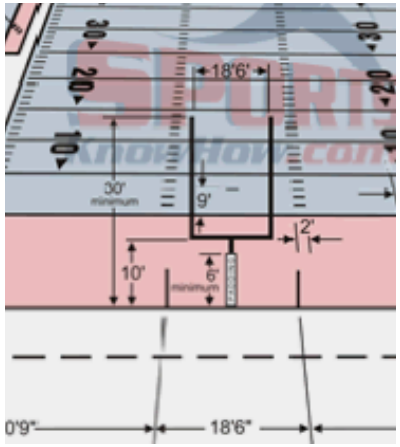
volume = (6.33 x 108 x 2)
+ (6.33 x 120)
+ (6.33 * 222)

surface area (4 cylinder sides + 2 circles)

$2 \times pi \times r^2$

$2 \times pi \times r \times h$

= 11,907 sq in (cylinders) + 62.94 sq in (circles)
= 11159 sq in = 77.49 sq ft



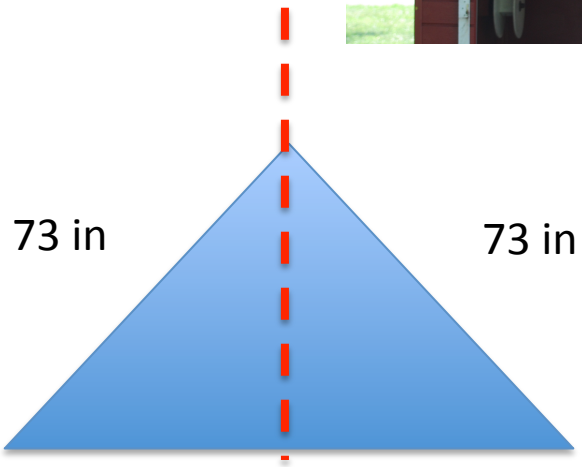
continued

S.A	h	r
2148	108	3.17
2148	108	3.17
2386	120	3.17
4415	222	3.17
11097		

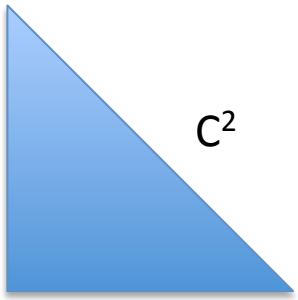
241cm

area of triamgle = 0.5 x 241cm x (241cm x 3)
= 87122 sq cm
=

from Cole



107 / 2 = 53.5 in

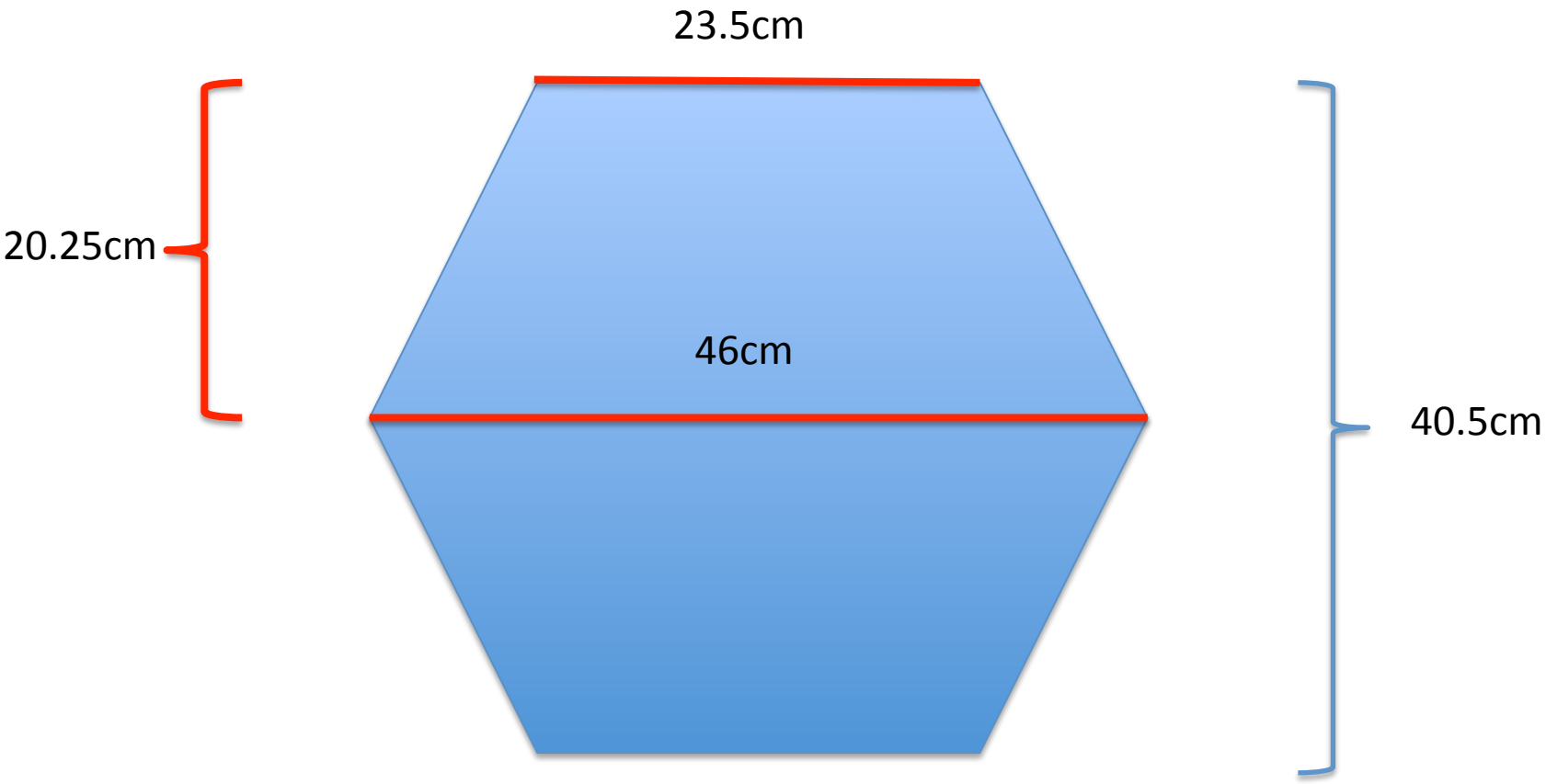


$C^2 = A^2 + B^2$

$73^2 = A^2 + 53.5^2$

$A = 49.88$

Hexagonal Garbage Can

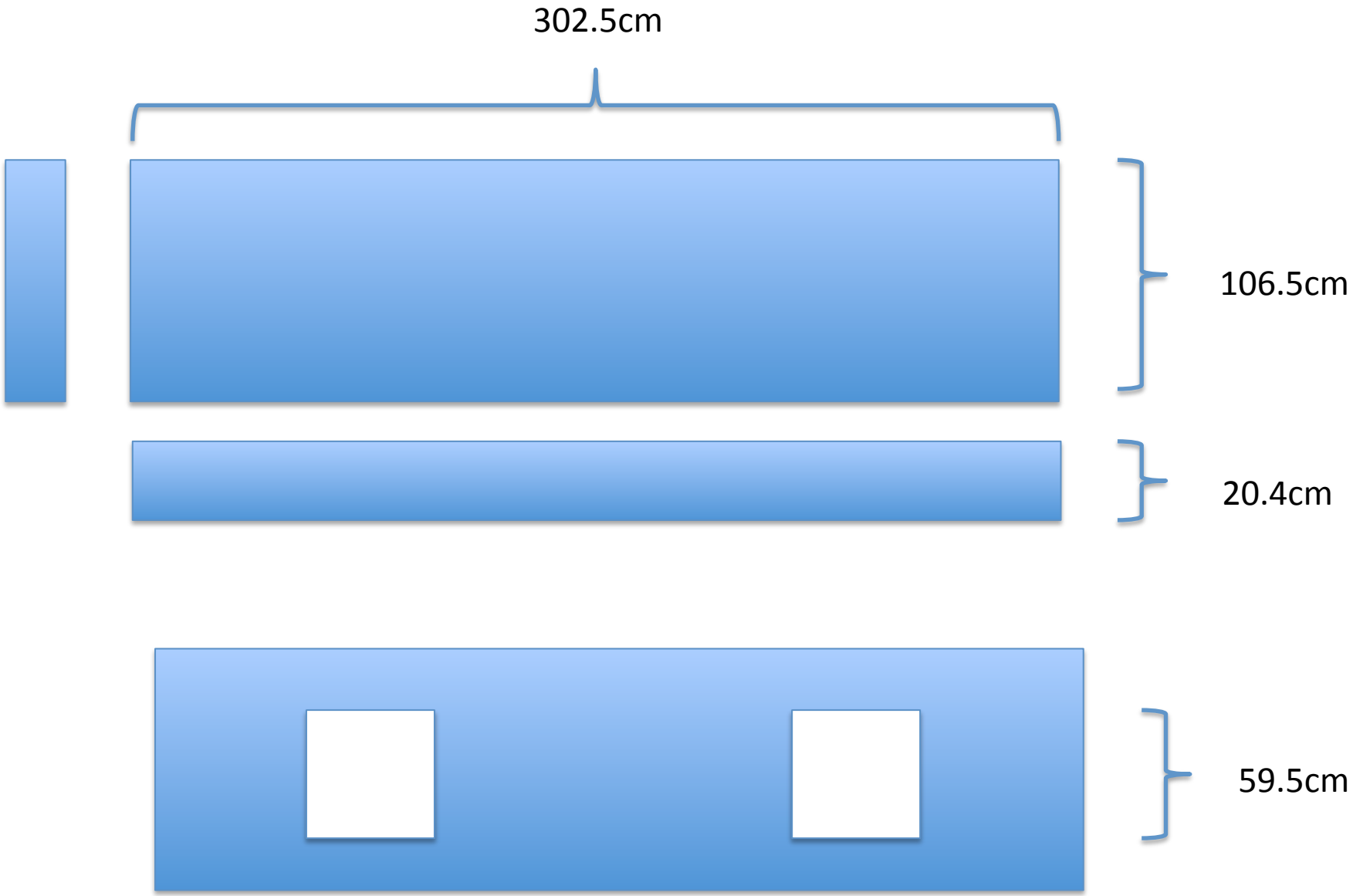


area of trapezoid = 0.5(23.5cm + 46cm) * 20.25 = 34.75sq cm

area of hexagon = 2 x area of trapezoid = 2 x 34.75 sq cm = 69.5 sq cm

volume of hexagon = base x height = 69.5 x 68.5 = 4760.75 cu cm

MS Bench



MS Bench

top = 106.5cm x 302.5cm
= 32216sq cm

long side = 302.5cm x 20.4 cm
= 6169 sq cm

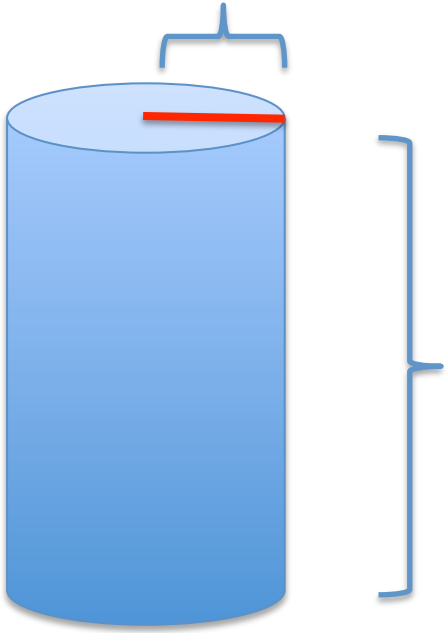
short top = 106.5cm x 20.4cm
= 2173 sq cm

top less two squares
= 32216sq cm – 2 x 3540.5 sq cm
= 25135 sq cm

total surface area = 32216 + 6169 + 2173 + 25135
= 65694 sq cm

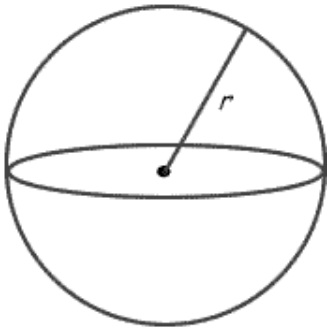
Tennis balls in a cylinder

radius
= 2 feet = 24 inches

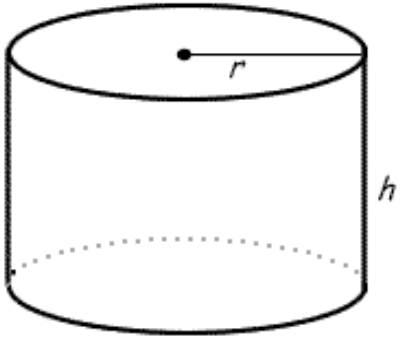


5 feet = 60 inches

diamater = 2.63 inches (6.7cm)



Volume $V = \frac{4}{3}\pi r^3$



Volume $V = \pi r^2 h$

volume of can = 24 x 24 x 60 x pi inches
= 34560 pi cubed inches

volume of tennis ball (sphere)
= 4/3 x 2.63^3 x pi
= 24.25 pi inches cubed

34560 / 24.25
= 1424

Slope of MS slides

small slide
rise = 47 in
run = 77 in
slope = 0.61

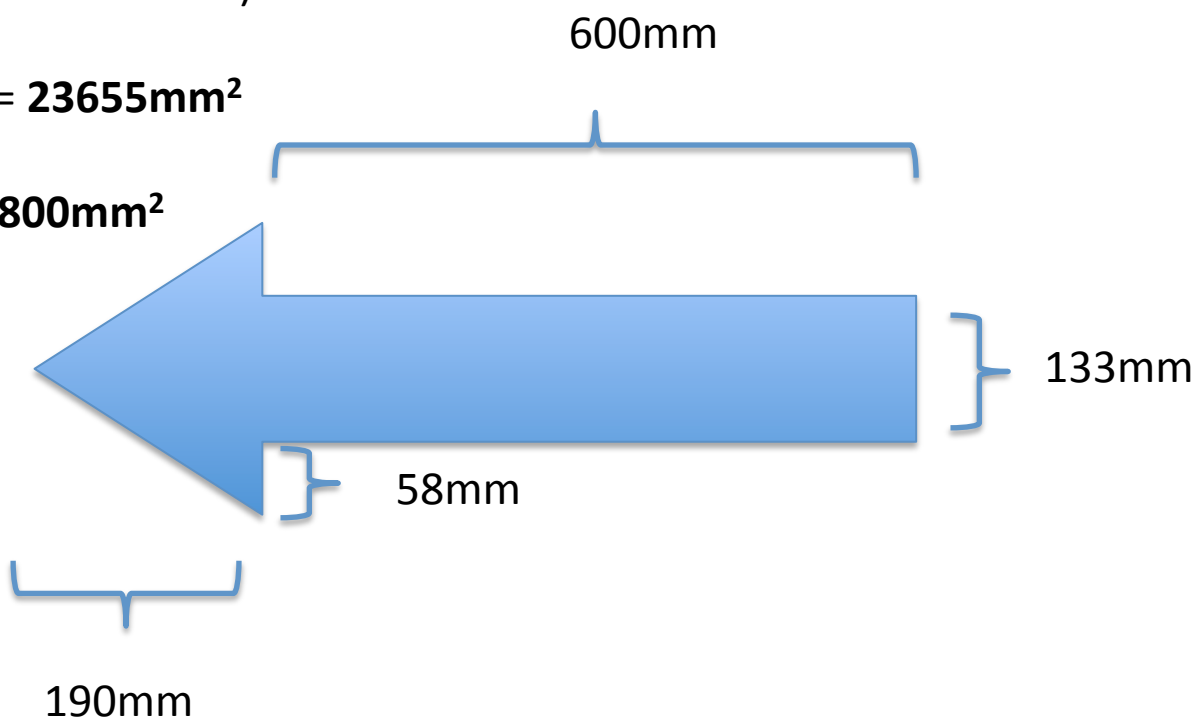
large slide
rise = 82.25 in
run = 114 in
slope = 0.72

Extra Slides

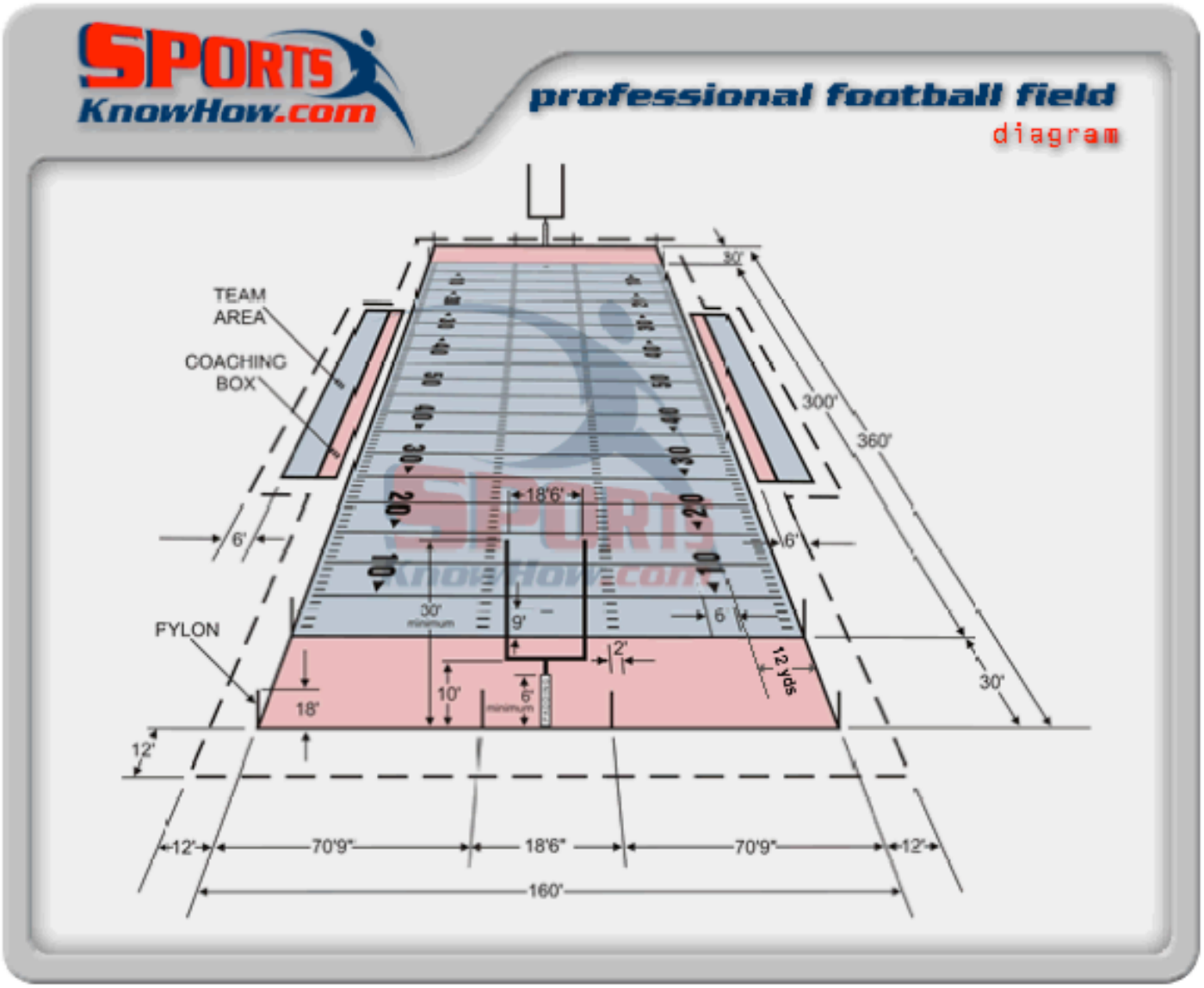
whole sign = 89cm x 29 cm
= 890mm x 290mm = 258100mm^2

triangle:
base = 249 mm (58mm + 58mm + 133 mm)
height = 190 mm
area = 1/2 (249mm)(190mm) = **23655mm^2**
rectangle:
area = (600mm)(133mm) = **67800mm^2**
total arrow = 91455 mm^2

total - arrow = black portion
= 25810mm^2 – 91455mm^2
= 16645mm^2



ce = 50.5cm



http://www.sportsknowhow.com/football/field-dimensions/nfl-football-field-dimensions.html

1 centimeter = 0.393700787 inches